DISPUTATIO MEDICA INAUGURALIS DE HYDROCEPHALO PHRENITICO.

Revd. John Grant
with best respects from
the Autho

DISPUTATIO MEDICA
INAUGURALIS
DE
HYDROCEPHALO PHRENITICO;

QUAM,

ANNUENTE SUMMO NUMINE,

Ex Auctoritate Reverendi admodum Viri,

D. GEORGII BAIRD, SS. T. P.

ACADEMIÆ EDINBURGENÆ PRÆFECTI;

NECNON

Amplissimi SENATUS ACADEMICI Consensu, et
Nobilissimæ FACULTATIS MEDICÆ Decreto;

PRO

GRADU DOCTORIS,

SUMMISQUE IN MEDICINA HONORIBUS AC PRIVILEGIIS,
RITE ET LEGITIME CONSEQUENDIS;

ERUDITORUM EXAMINI SUBJICIT

ROBERTUS PATERSON,

SCOTUS.

" *Te precor, arcitenens, adsit tua laurea nobis,*
" *Carminis et medicæ* PHOEBE *repertor opis.*
" *Tu pariter vati, pariter succurre medenti:*
" *Utraque tutelæ subdita cura tuæ.*"

Prid. Id. Septembris, horâ locoque solitis.

EDINBURGI:
EXCUDEBANT ADAMUS NEILL ET SOCII.

1803.

VIRO INCLARESCENTI,

ALEXANDRO MONRO

TERTIO, M. D.,

ANATOMICES

IN ACADEMIA EDINENSI

PROFESSORI DESIGNATO,

NULLI MAJORUM

FUTURA SPE

SECUNDO;

ET

VIRO ERUDITISSIMO,

ANDREÆ DALZEL,

LITERARUM GRÆCARUM

IN EADEM ACADEMIA

PROFESSORI,

LITERIS, FIDE, MORUM COMITATE,

ET REIPUBLICÆ STUDIO

CONSPICUO;

HANC DISPUTATIONEM,

GRATO ANIMO

MOTUS,

D. D. Dque

ROBERTUS PATERSON.

VIRO REVERENDO

FRATRIQUE CARISSIMO,

JOANNI PATERSON,

ALDEARNÆ

IN PRÆFECTURA NARNIENSI

S. T. P.;

ITEMQUE,

VIRO SPECTATISSIMO,

THOMÆ STEPHEN,

M. D.;

UTRISQUE VITÆ INTEGERRIMIS, DIGNIS

QUIBUSCUM MICES IN TENEBRIS

UTRISQUE,

CADUCUM HOC

PERENNIS AMORIS ET AMICITIÆ

MONUMENTUM,

EX ANIMO,

OFFERT

ROBERTUS PATERSON.

DISPUTATIO MEDICA

INAUGURALIS

DE

HYDROCEPHALO PHRENITICO.

PROOEMIUM.

§ I. ETSI duo, intra cranium, *hydrocephali* sunt, quorum unus PHRENITICUS, seu ACUTUS appellatur, alter LONGUS, seu CHRONICUS; quibusque pauci morbi periculosiores sunt curatuque difficiliores, atque ad quos cognoscendos medicinæ studiosi debent animos majore curâ attendere: nobis tamen consilium est de ACUTO tantùm scribere; et, sub finem, unam alteramve LONGI historiam, appendicis modo, subnectere.

II. Vetusti scriptores videntur hunc morbum parùm intellexisse. Eum enim, et morbum quem nunc medici nuncupant *hydrocephalum chronicum*, eodem nomine appellabant: quo fit, ut pauca ei propria ex eorum scriptis possimus colligere. Vixdùm, enimvero, centum amplius anni sunt, cùm medici animos attenderunt ad eum cognoscendum dignoscendumque, et ad causas indagandas undè oriatur.

III. PAISLEIUS *, chirurgus GLASGUENSIS, omnium primus, quantùm scimus, quibus cognoscatur signis hic morbus, luculenter descripsit. Post eum, WHYTTIUS adhuc fusiùs et accuratiùs narravit plurima mala, quibus mortales affligit; dein QUINIUS et RUSHIUS. Nostrâ ætate, pauci morbi sunt, quorum naturam medici meliùs intelligunt; pauciores adhuc, ad quos curandos minùs valet medicina.

CAP.

* Vid. *EDIN. Medical Essays*, vol. iii. art. xxiii.

CAP. I.

De Definitione.

IV. MORBUS, quem persequimur, à CULLENO definitur, "*Apoplexia paulatìm adoriens; infantes et impuberes, primùm lassitudine, febricula, et dolore capitis, dein pulsu tardiore, pupillæ dilatatione, et somnolentiâ afficiens* *."

V. In definitione, quam citavimus, quædam omisit CULLENUS, quæ adjici debent, nempè morbum nonnunquàm adultos afficere †; et, sub

* Vid. CULLEN. *Synops. Nosolog. Method.* tom. ii. Gen. xlii. Spec. 3.

† Vid. *LONDON Medical Observations*, Vol. iv.

sub finem, arteriarum motus adeò frequentes fieri, ut vix, imò haud rarò ne vix quidem, possint numerari.

VI. CULLENIANÆ definitioni morbi, quem agitamus, perpauca tantùm addidit GREGORIUS; à quo definitur, "*Apoplexia paulatìm adoriens;* "*infantes et impuberes plerumquè, primùm* "*lassitudine, febriculâ, et dolore capitis; dein* "*pulsu tardiore, tandem frequentiore, pupil-* "*læ dilatatione, et somnolentiâ afficiens* *."

VII. Morbi, quem nos persequimur, MORISONIUS, qui primus, quantùm scimus, *HYDROCEPHALUM PHRENITICUM* appellavit, adhuc magis auxit definitionem, quam ediderat CULLENUS. Ab eo hic *hydrocephalus* definitur, "*Inflammatio* encephali *paulatìm adoriens;* "*impuberes, rarissimè adultos et ætate floren-* "*tes, provectiores fermè nunquàm, afficiens,* "*primùm*

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* Aud. GREGOR. *Prælect. De Medicin. Practic.* in *ACAD. EDIN.*

"*primùm lassitudine, febriculâ, et capitis do-*
"*lore; dein pulsu tardiore et inæquali; de-*
"*mum pulsu frequentissimo at æquali, pupillæ*
"*amplificatione, et somnolentiâ: calore corpo-*
"*ris parùm, si omninò, cum arteriarum pulsu,*
"*variante* *."

VIII. *Hydrocephalus phreniticus*, ut observârunt nonnulli medici, infantes sanos, agiles, et vegetos, præ cæteris, afficit. Nonnunquàm autem imbecillos, ignavos et remissos adoritur; neque raró eos, qui parentum vitio scrofulæ opportuni sunt.

CAP.

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* Vid. MORISON. Disput. Inaug. *De Hydrocephalo Phrenitico*, § XVII. EDIN. ann. M,DCC,XCIX.

CAP. II.

De Signis.

IX. WHYTTIUS, pulsu arteriarum accuratè observato, tempus, quod cursu implet hic morbus, in tria spatia dividit; et, hac in re, eum omnes ferè auctores imitati sunt. Nos itaque, cæteros secuti, propria cujusque spatii signa ordine narrabimus.

X. *SPATIUM PRIMUM.*—Ineunte *hydrocephalo phrenitico*, languet stomachus, et totum quidem corpus: animus demittitur: pallet facies: macrescit corpus: incalescit cutis. Febris simul oritur, quæ accessionibus inæqualis est, et vesperascente plerumquè die ingravescit. Arteriæ, tametsi raró validiùs solito micent, crebriùs tamen, plerumquè centies amplius sexagesimâ quâque horæ parte; imò nonnunquàm

nonnunquàm, ut à WHYTTIO accipimus, centies et quadragies *. At rarò tamen arteriæ tam citò moventur; atque nonnulli auctores, sicut WATSONIUS et FOTHERGILLIUS, asserunt, initio morbi, arteriarum motus non esse solito celeriores †.

XI. Increscente morbo, plùs plùsque languet stomachus. Lingua plerumquè sordida est: nonnunquàm tamen rubra et nitida, dum *aphthis* exasperetur. Æger sitit, præter solitum; et aliquandò vomit, modò semel bisve quotidie, modò semel tantùm biduo. Rarò accidit, si procedat, utì solet, morbus, quin vomitu plùs minùs æger vexetur.

XII. Dum urgent hæc mala, alvus astricta est; et simul adeò torpida, ut non possit citari, nisi magnis catharticorum dosibus. Nonnunquàm autem alvus astricta est, et soluta

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* Vid. WHYTT. *Observations on the Dropsy of the Brain.*

† Vid. LONDON *Medical Observations*, vol. iv.

luta vicissim. Quæ descendunt, ea aliquandò fœtent, simulque subviridia sunt.

XIII. Ubì huc processum est, modò sinciput, supra oculos, vehementer dolet; modò vertex; modò alterutrum temporum: atque dolor, urgente nauseâ et vomitu, remittit; contrà, increscit, his remittentibus. Ubì, ut haud rarò, unum latus capitis magis, quàm alterum, dolet, in id, quod magis dolet, decumbit æger *. Dolet quoque cervix, imò nonnunquàm brachia, intestina et crura; atque, his dolentibus, aliquantùm remittit dolor capitis.

XIV. Hoc ferè tempore, oculi lumen refugiunt, et, luce admissâ, haud leviter dolent. Quinetiam aures, ut à RUSHIO accipimus, sonorum impatientes fiunt †. Nares arescunt et

* Vid. QUIN. Dissert. Inaug. *De Hydrocephalo Interno.* EDIN. Ann. M,DCC,LXXIX.

† Vid. RUSH, *Medical Inquiries, &c.* Vol. II.

et pruriunt, neque raró eas unguibus carpit æger. Stridunt quoque dentes, inter somnum.

XV. *Spatium secundum*—incipit à tempore, quo arteriarum pulsus, ex celeribus et æqualibus fiunt tardi, et cùm vi tum temporibus inæquales. Tales fiunt, unam duas tresve hebdomadas, ante mortem. Hoc tempore, non solùm, quàm anteà, tardiores evadunt, sed haud raró, quàm solent, etiam in sano homine. Nihilo tamen minùs, quod sanè mirum, calor corporis et febris adeó non remittunt, ut intendantur.

XVI. Ubì eó perventum est, capitis dolor paululùm remittit. Ægri, anteà vigiles, nunc incipiunt esse somniculosi: atque, dummodó sint infantes, sæpè apponunt alterutram manuum, manusve utrasque ad caput, et lamentabiles gemitus edunt; neque tamen possunt rogati, quid sibi sit rei, percunctantibus dicere.

XVII. Eodem ferè tempore, oculi perverti incipiunt, modò nasum versus, modò tempora; atque ex re naturaliter unâ vident duas. Simul, vel saltem haud multò pòst, accedit delirium; neque raròægri, sicut perculsi lymphatico pavore, assidentes terrent plangoribus.

XVIII. Hoc ferè tempore, vomitus minùs urget; atque æger, sicut famelicus, nonnunquàm avidè devorat oblatos cibos. Haud rarò vermes dejiciuntur, aut, horresco referens, ore naribusve sponte erepunt; neque tamen æger eorum expulsione aut migratione ullâ malorum intercapedine fruitur. Nonnunquàm, at neutiquàm semper, perquàm fœtet anima.

XIX. Urina interdum cruda est; interdum naturalis, et copiosum sedimentum album deponit. Hoc tempore, aliquandò diem, vel diei partem, *hydrocephalici* malorum requiete fruuntur; adeò ut amici spe erigantur redeuntis

tis valetudinis. Brevi autem repetit morbus, quàm anteà, gravior. Quum ità sit, medici debent cavere, ne, fallace malorum remissione decepti, optatum morbi finem præsagiantur.

XX. *Spatium tertium*—incipit, ubì arteriarum ictus denuò fiunt celeres, et tam vi quàm temporibus æquales; quod plerumquè accidit, sex septemve dies, ante mortem. Hoc morbi tempore, arteriarum motus nonnunquàm celeres sunt, ultra quàm quod credere possunt inexperti medici: attamen, quippe cùm distincti temporibus, secùs ac sub finem continuarum febrium, sint, plerumquè possunt numerari. Whyttius, gravis auctor, fert, se, in uno *hydrocephalico*, ducentos amplius et decem arteriarum motus, sexagesimâ horæ parte, numerâsse; et addit, *hydrocephalicos* nunquàm mori, quamdiù arteriæ non centies et tricies, sexagesimâ horæ parte, micant*.

C[illegible]tum

* Vid. Whytt. *Observations on the Dropsy of the Brain.*

Centum nonaginta sex arteriarum motus, eâdem horæ parte, semel notavit Gregorius *. Celeritas, quâ, inveterato morbo, arteriæ micant, alia est aliis diei temporibus.

xxi. Sopore nunc obrui incipit æger. Excitatus aliena aut delira submissâ voce mussitat. Haud rarò unius oculi, dein alterius palpebra, nervis resolutis, motûs impotens fit. Pupillæ dilatantur, neque, præ nervorum torpore, vividissimâ luce sese contrahunt. Nonnunquàm tamen, etiam postquàm amplificatæ sunt pupillæ, admissà vivida lux oculis molestiam affert; undè possumus concludere, ægrum jam cæcum esse.

xxii. Hoc ferè tempore, quæ in oculis alba esse debent, ea rubent; et sanguis haud rarò destillat de naribus. Nonnunquàm sanguine in *telam cellulosam* effuso livet facies.

Una

* Aud. Gregor. *Prælect. De Medicin. Practic. in Acad. Edin.*

Una aliquandò gena rubet et calet, dum pallet et friget altera.

XXIII. Aliquandò omnes unà musculi rigent; aliquandò, sicut in morbo comitiali, convelluntur; aliàs tanquàm tremoribus singultiunt. Nonnunquàm æger uno latere captus est, altero convellitur. Purpureis interdum maculis variantur brachia et crura. Fæces et urina redduntur voluntatis injussu; atque æger, omnes musculos convulsus, fato concedit.

XXIV. Tempus, quod cursu occupat hic morbus, in aliis aliud est. Unâ nonnunquàm hebdomadâ ægrum rapit *. Plerumquè autem protrahitur per quatuor vel sex hebdomadas. Aliquandò, ut à GREGORIO accipimus, in tres menses perdurat †; imò, ut perhibet

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* Vid. QUIN. Dissert. Inaug. *De Hydrocephalo Interno.*

† Aud. GREGOR. *Prælect. De Medicin. Practic.* in *ACAD. EDIN.*

hibet Monro Secundus, aliquandò quatuor *.

xxv. Priusquàm hanc rei nostræ partem ad finem perducimus, opus est observemus, mala, quibus mortales afficiat *hydrocephalus phreniticus*, non semper cursu perindè esse, ac narraverimus. Nonnunquàm enim usquè eò intermittunt, ut ægri haud parvum à *cinchonæ* cortice accipiant beneficium. Aliquandò, septem à primo accessu diebus, æger tollitur, cujus arteriarum pulsus primùm erant tardi et inæquales, dein celeres, tùm, ante finem, denuò tardi et inæquales ; cujus neque oculi lumen refugiebant, neque, nisi ultimo propè morbi die, amplificabantur pupillæ ; cujus neque dolebat caput, neque vomitu urgebatur stomachus.

CAP.

* Vid. Monron. Secund. *Treatise on the Brain.*

CAP. III.

De cadaveribus inspectis.

XXVI. PATEFACTIS cerebris eorum, quos superavit *hydrocephalus phreniticus*, vasa ferè semper oculis obveniunt sanguine turgida. Ea præsertìm *piæ matris* proindè inspicientium oculis videntur, quasi liquore tenui sanguinolento arte immisso impleta fuissent.

XXVII. Ventriculi simul cerebri, effuso humore oppleti, conspiciuntur. Interdum tamen, ut à QUINIO * et GREGORIO † accipimus, in cerebris eorum, qui, dum vivi, malis urgebantur, qualia ex humore in ventriculos effuso

* Vid. QUIN. Dissert. Inaug. *De Hydrocephalo Interno.*

† Aud. GREGOR. Prælect. *De Medicin. Practic.* in *ACAD. EDIN.*

effuso oriri putant medici, nihil, præter consuetudinem, quicquam conspicitur; nisi vasa sanguine admodùm turgida, et, incisâ substantiâ, puncta rubra plura, quàm in sanis cerebris esse solent.

XXVIII. Sæpissimè verò in uno, omnibusve simul ventriculis, conspicitur humor limpidus vel flavus. Ventriculorum lateralium unum humore distentum bis deprehendit Whyttius, dum alter parum humoris continebat *. Whyttius autem interdum †, et Monro compluries ‡, humorem aquosum in omnibus simul ventriculis conspicati sunt. Humor, si auctoribus credamus, nonnunquàm inter cerebrum, et membranas quæ circumcingunt, effunditur. Hujusmodi verò effusio rarissimè accidit.

XXIX. Effusus

* Vid. Whytt. *Observations on the Dropsy of the Brain.*

† Vid. Whytt. *Observations, &c.*

‡ Vid. Monron. Secund. *Treatise on the Brain.*

XXIX. Effusus humor aliàs copiâ alius est. Plerumquè uncias, à duabus ad sex, pondere æquat. Interdum autem multo abundantior est; et semel, ut certiores nos facit GREGORIUS, tantâ copiâ in ventriculis continebatur, ut pondere quindecim uncias æquaret.

XXX. Possit, necne, calore coagulari humor, qui in ventriculis cerebri deprehenditur, nondùm inter se consentiunt medici. Nonnulli, præcipuè WHYTTIUS *, posse negant. MONRO, BAILLEIUS †, aliique comperti sunt, acidis concrescere; at ægriùs, quàm aquam, quæ in cæteris hydropicorum cavis contineri solet. Ægriùs acidis idcirco coit, ut putat MONRO, quòd minus sanguinis *lymphæ* continet ‡; quæ sanè sola pars humorum aquoso-

* Vid. WHYTT. *Observations on the Dropsy of the Brain.*

† BAILL. *Morbid Anatomy.*

‡ MONRON. SECUND. *Treatise on the Brain.*

rum, in cava effusorum, est, quam acida cogere possunt.

XXXI. Tumores magnitudine varii, et haud rarò suppurati, nonnunquàm detecti in cerebro et cerebello sunt. Interdùm cerebrum, ex dimidia ferè parte, marcidum et quasi fracidum conspicitur. Pueri, quem abstulit morbus, de quo scribimus, et cujus caput patefecit PAISLEIUS, et morbida literis tradidit, in ea parte *duræ matris*, quæ sinistro *ossi parietali* subjacebat, tumor erat, majusculam avellanam magnitudine æquans; et plures alii congeneres tumores, at minoris magnitudinis, ex sinistra parte *superioris sinûs longitudinalis*. *Pia mater*, ubì *nervus opticus* cerebro exit, *duram matrem* crassitudine ferè æquabat; et, in partibus, ubì tumores erant, duæ hæ matres adeò cohærebant, ut non possent, nisi lacerando, separari. Ex ventriculis, incisione factâ, octo ferè unciæ sufflavi humoris effluxerunt; et *plexibus choroeidibus*, qui duri erant, vesiculæ plurimæ,

plurimæ, *hydatidibus* persimiles, in longitudinem ordinatìm adhærebant *.

XXXII. WHYTTIUS deprehendit, in dextro *thalamorum nervorum opticorum*, tumorem sufflavum et duriusculum, qui magnitudine minusculum ovum gallinaceum propè æquabat †. Tumorem huic similem, in cerebello, bis conspicatus est GREGORIUS ‡. Perhibent PETITUS et MONRO, se vidisse *glandulam pituitariam* duriorem, quàm sana soleat; et QUINIUS, *lymphaticas* colli glandulas multùm tumefactas.

CAP.

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* Vid. *EDINBURG. Medical Essays*, vol. iii. Artic. XXIII.

† Vid. WHYT. *Observations on the Dropsy of the Brain.*

‡ Aud. GREGOR. Prælect. *De Med. Practic.* in *ACAD. EDIN.*

CAP. IV.

De Causis.

XXXIII. Dictis signis, quibus cognoscitur *hydrocephalus phreniticus*, itemque morbidis, quæ apparuerunt in cerebris eorum, quos hic morbus abstulit; res postulat, ut, hìc loci, exponamus causas, tam abditas et evidentes ex quibus proveniat, quàm continentem seu proximam.

XXXIV. *Abditæ*—morbi, quem persequimur, causæ quæ sint, nondùm satìs constat. Prægressos morbos reddere infantes et pueros aptos, quibus obrepat *hydrocephalus phreniticus*, vero haud absimile est; cùm præsertìm hic morbus haud rarò subsequatur *variolam*, *rubeolam*, *scarlatinam*, et plures alios morbos qui impuberes adoriuntur.

XXXV. Strumosi,

XXXV. Strumosi, ut medicis haud paucis videtur, præ cæteris, huic morbo opportuni sunt: et haud inficiandum est, quin res observando cognitæ eorum opinionem verisimilem reddant. Ex duobus enim et viginti *hydrocephalicis*, quos vidit PERCIVALIUS, haud minus undecim manifestè strumosi erant; et tres alii, in quibus manifesta scrofula non apparebat, strumosâ tamen videbantur corporis constitutione *. Familiæ quoque mentionem fecit SAUVAGESIUS, ex qua nati omnes, nondùm sexennes, *hydrocephalo phrenitico* interiêrunt †.

XXXVI. Verùm concedendum tamen est, ex sanis parentibus, quibus nulla latent strumæ semina, natos haud raro *hydrocephalo phrenitico* corripi et perire. Namque maritus et conjux, ut à QUINIO accipimus, qui utrique à scrofula integri erant, omnes deinceps filiolos hoc

* Vid. PERCIVAL. *Medical Facts*, vol. i.

† Vid. SAUVAGES. *Nosolog. Method.* tom. i.

hoc morbo abreptos plorârunt, quorum tamen omnes filiolæ integræ pubuerunt *.

XXXVII. Sunt, qui censeant, tumores, qui in cerebris eorum conspiciantur, quos *hydrocephalus phreniticus* peremit, strumosos esse, et impuberes, quorum in cerebris crescant, aptos reddere, quos intercipiat hic morbus. Sed, quoniam, ut nobis saltem videtur, nondùm satìs constat, utrùm tumores gignat morbus, an morbum tumores, medici, de re etiamnum dubia, certò concludere non debent.

XXXVIII. Quum præcoces et vegeti infantes, quippe in quorum cerebra arteriæ cito motu sanguinem distribuant, præ cæteris, *hydrocephalo phrenitico* obnoxii sint ; et, quibus infantibus majuscula sunt capita, eos hic morbus rarissimè adoriatur ; opinionem proposuit MORISONIUS,

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* Vid. QUIN. Dissert. Inaug. *De Hydrocephalo Interno.*

Morisonius, quæ, si non omnes habeat veritatis numeros, ingenium saltem perolet. In re verò tanta, auctorem ipsum, pro me, ponam. " Nobis vero propius videtur, causam, quâ *hydrocephalo phrenitico* obnoxii fiant impuberes, esse præmaturam calvæ firmitatem, propter quam crescenti cerebro cedere recusat, et sic obstat, quò minùs hoc justam acquirat magnitudinem. Cerebri igitur, utpote quod mole minus sit, quàm pro vi cordis, et arteriarum quæ in caput sanguinem distribuunt, vasa perpetuò plena supra modum sint, necesse est. Quò fit, ut arteriæ ejus justo aptiores sint, quæ causis cor ac arterias incitantibus inflammationem concipiant, et, per surculos exhalantes, in ejus cava effundant humorem *."

xxxix. *Evi-*

* Vid. Morison. Disput. Inaug. *De Hydrocephalo Phrenitico*, § liv. Edin. ann. m,dcc,xcix.

XXXIX. *Evidentes.*—Quibus causis excitetur *hydrocephalus phreniticus*, nondùm certò sciunt medici. Quum autem hic morbus initio inflammationem habeat, verisimillimum videtur, causis moveri, quæ faciant, ut in cerebrum sanguis nimiâ copiâ et impetu diffundatur.

XL. Hujusmodi causæ sunt, vehemens exercitatio ; cranium præcipitationibus aut ictibus percussum ; caput diù demissum, ut in quibusdam lusoriis puerorum certaminibus accidit * ; frequens et vehemens infantum vagitus ; insolatio. His accedant, si auctoribus fidem ponamus, dentitio ; verminatio † ; febres, sive remittentes sive continuæ ;

* Vid. Rush. *Medical Inquiries and Observations*, &c. vol. ii. pag. 211.

† Rush. *Medical Inquiries*, &c. vol. ii. pag. 214.

nuæ *; phthisis pulmonum †; febris, quam excitant *variola*, *rubeola* et *scarlatina*.

XLI. Numne, utì dicunt nonnulli auctores, *hydrocephalus phreniticus* oriatur ex duritia *glandulæ pituitariæ*, capitis exhalatione suppressâ, urinæ impotentiâ, ruptis cerebri *lymphaticis*, et exsiccatis veteribus ulceribus ‡, nobis dubium videtur. Putamus, hujusmodi causis potiùs excitari eum *hydrocephalum*, quem, quippe à nostro prorsùs naturâ diversum, medici *LONGUM* appellent.

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* Vid. LIEUTAUD. *Histor. Anatomico-Medic.* vol. ii.

RUSH. *Medical Inquiries*, &c. vol. ii. pag. 211.

† Vid. PERCIVAL. *Essays Medical, Philosophical, and Experimental*, vol. ii. pag. 339. et 340.

QUIN. Dissert. Inaug. *De Hydrocephalo Interno.*

‡ Vid. LIEUTAUD. *Hist. Anatomico-Medic.*

RUSH. *Medical Inquiries, &c.* vol. ii. pag. 214.

XLII. *Continens*, — seu proxima *hydrocephali phrenitici* causa, olim, ubì morbi naturam medici nondùm intellexerunt, putabatur, esse aquosus humor in ventriculos cerebri effusus. Sic WHYTTIO videbatur, qui, haud secùs atque alii medici, pro morbo hydropico habebat*. Effusus autem humor, quippe cùm ex eo oriri non possint mala, quibus, primo morbi spatio, *hydrocephalici* urgentur, effectus potiùs habendus est, quàm causa.

XLIII. Veram hujus morbi naturam, et continentem causam, omnium primus, quantùm scimus, perspexit CULLENUS. Hic medicus, sagax in primis, signis perpensis, sibimetipsi persuasit, et dein QUINIO suggessit, continentem *hydrocephali phrenitici* causam eandem esse, atque cæterorum morborum qui inflammationem habeant †: et, utì pulmonum *pleu-*

*ræ*ve

* Vid. WHYTT. *Observations on the Dropsy of the Brain.*

† Vid. QUIN. Dissert. Inaug. *De Hydrocephalo Interno.*

*ræ*ve inflammatio haud rarò facit, ut humor aquosus in *pleuræ* saccum effundatur, et spiritum adeò impediat, ut æger suffocetur; sic cerebri ejusve *piæ matris* inflammationem efficere, ut effundatur similis humor, qui sensus stupefaciat, demumque, ipsis motibus vitalibus sedatis, sempiterno ægrum somno consopiat.

XLIV. Hanc (XLIII.) veram *hydrocephali phrenitici* causam esse, multa ostendunt. Primo enim morbi spatio, sanguinis, ex vena emissi et frigescentis, *fibrina* se à sero et rubris globulis dissociat, et supernatans, corium albidum repræsentat; haud secùs ac sanguinis eorum, qui *pleuræ* inflammatione laborant. Quinetiam, stimulantibus primo morbi spatio assumptis, omnia mala ingravescunt; dum abstinentiâ levantur, et exinanitione. Inflammatio, porrò, *piæ matris*, ut GREGORIUM et QUINIUM edocuerunt cerebrorum inspectiones, mortem nonnunquàm priùs affert, quàm ullus dum in ventriculos effusus humor est;

est; et haud dubiis tamen hujusmodi inflammationis malis ægri, ante mortem, afficiuntur.

XLV. Hâc opinione acceptâ, possumus intelligere, undè, primo morbi spatio, caput acutissimè doleat; undè oculi lumen refugiant, et admissâ luce doleant; undè, in auribus, dolorem moveant facientes sonos tremores; et undè somnus fessos oculos fugiat. Mala autem, quæ, secundo et tertio morbi spatio, ægrum premunt, ex effuso humore cerebrum urgente haud dubiè oriuntur; veternus, nempè, sopor, oculi perversi, ex una re duæ visæ, cæcitas, surditas, itemque nervorum resolutio et convulsiones.

CAP.

CAP. V.

De Diagnosi.

XLVI. PLURIMI cùm medicorum tum ægrorum interest, initio adversæ valetudinis discernere, quis morbus urgeat. Morbo enim incognito, medicus animi incertus est, quibus medicamentis ægro succurrat; atque, dum dubitat, occasio faustè opitulandi omittitur. Quippe, quos morbos nascentes potest levare aut tollere medicina, eosdem confirmatos vel inveteratos mitigandi curandive haud rarò impotens est, et nullum enimvero sæpiùs, quàm eum, de quo scribimus.

XLVII. Pauci morbi sunt, quos, haud dum confirmatos, difficilius est dignoscere à morbis, quibus est cum iis quandam signorum communitas, quàm *hydrocephalum phreniticum*.

Signorum

Signorum enim, quæ suprà narravimus, haud rarò constans neque concursus est, neque ordo. Quinetiam, eorum nonnunquàm abest unum alterumve, nonnunquàm plura. Namque nonnullorum, quibus, dum vivi, neque dolor capitis erat et membrorum, neque defectus stomachi, neque vomitus, neque pupillæ amplificatæ, neque delirium, neque perversi oculi, neque pulsus tardus et inæqualis; cerebrorum tamen ventriculi, post mortem, effuso humore aquoso distenti conspecti sunt, atque comprobârunt, *hydrocephalo phrenitico* vitam esse extinctam *.

XLVIII. Sed, utcunque difficile sit, utile tamen erit paucis dicere, quibus morbus, quem persequimur, dignoscatur ab iis, qui signis paucioribus pluribusve simulent; verminatione, scilicet, dentiendi difficultate, et *tabe mesentericâ*.

XLIX. *VERMI-*

* Vid. Rush. *Medical Inquiries, &c.* vol. ii. p. 209. et 210.

XLIX. *Verminationi*—et *hydrocephalo phrenitico* communia sunt, vomitus, dolor capitis, convulsiones, delirium, obscura febris, et pupillarum amplificatio. Medicus, qui animi dubius est, uter horum morborum urgeat, debet percunctari, ubì et qualis initio dolor capitis esset, et quam posteà partem occupaverit; qualis appetitus sit; astricta, an soluta, alvus; tumidum, necne, abdomen; atque observare, quemadmodùm se habeant oculi, nares, labrumque superius. His enim cognitis, plerumquè scire poterit, vermiculeturne æger, an *hydrocephalo phrenitico* laboret.

L. *Hydrocephalicorum* primùm summa cervicis vertebra dolet; dein alterutrum temporum, aut frons, aut vertex, aut occiput: et dolor acutissimus est; atque, quamvis ab uno haud rarò temporum ad alterum subitò pertendat, rarissimè tamen multùm remittit, dum effusus in ventriculos humor sensum hebetaverit. Verminantium, contrà, totum ferè caput æqualiter dolet; atque dolor, superquàm

superquàm quòd obtusus est, jam remittit, jam ingravescit.

LI. Quinetiam *hydrocephalici*, præ stomachi defectu, rarissimè cibos et potiones appetunt. Semel singulis diebus, vel biduo triduove, gravi vomitu urgentur. Tarda iis ferè semper alvus est; naturale verò abdomen. Contrà, vermiculatorum plerumquè vorax venter est; alvus fluit; tumet, et pressu dolet abdomen.

LII. *Hydrocephalicorum*, porrò, oculi initio lumen refugiunt; dein, præ nervorum torpore, admissam lucem parùm sentiunt; tùm, amplificatis pupillis, pervertuntur, et ex una re duas vident; demùmque prorsùs caligant. Verminantium verò oculi, quamvis eorum pupillæ aliquantùm dilatentur, nec lucis tamen impatientes sunt; nec pervertuntur; nec duas ex una res videre videntur; nec eorum demùm acies hebescit.

LIII. Ad hoc, nares *hydrocephalicorum* aridæ sunt, et neque earum alæ et columna, præter modum, tument, neque labrum superius. De naribus autem vermiculatorum continentèr destillat tenuis et acris pituita: quæ non solùm ipsas, et earum alas et columnam, itemque superius labrum, irritat et tumefacit; sed etiam harum partium tantum pruritum movet, ut ferè continuò unguibus carpi concupiscant.

LIV. *Hydrocephalicorum*, insuper, calor neque remittit secundo morbi spatio, ubì arteriæ tardè et inæqualiter micant; neque intenditur tertio, ubì æqualiter denuò et celerrimè. Verminosorum verò calor, pulsu arteriarum citato intenditur, tardato remittit.

LV. Huc accedit, quòd verminosi, præsertìm si nondùm septennes sint, haud rarò convelluntur: rarissimè *hydrocephalici*, nisi adventante morte.

LVI. Vermiculati, denique, inter somnum, dentibus stridunt subindè: non item *hydrocephalici*, nisi, ut interdum, eorum simul interanea vermes prædentur.

LVII. *DENTIENDI DIFFICULTATI*—et *hydrocephalo phrenitico* communia sunt, lenta febris, defectus stomachi, vomitus, dolor capitis, convulsiones. Ob hanc signorum communitatem, sæpè difficile in primis est discernere, utrùm infantes dentiendi tantùm difficultate ægrotent, an *hydrocephalo phrenitico*.

LVIII. Verùm cùm tamen difficultèr dentientium, *hydrocephalicorum* non item, alvus catharticis facilè moveatur; os incalescat; rubeant et tumeant gingivæ; oculorum pupillæ obscurâ luce sese dilatent, vividâ coangustent: medici, qui hæc sciunt, et in memoria retinent, plerumquè poterunt discernere, utro morborum infantes urgeantur.

LIX. *TABES MESENTERICA.*—Qui glandularum *mesentericarum* duritiâ tabescunt, eorum nonnunquàm arteriæ inæqualibus temporibus micant; at, secùs atque *hydrocephalicorum*, semper celeriùs, quàm, cæteris paribus, secundâ valetudine solebant. Extabescentium, porrò, *hydrocephalicorum* non item, abdomen intumescit, quasi incluso spiritu distentum; atque artuum musculi paulatìm marcescunt.

LX. Haud rarò *hydrocephalus phreniticus* in eodem ægro concurrit unà cum aliquo morborum, quos modò memoravimus; et, præ commixtorum malorum concursu, medicus animi dubius est, uter morborum primarius habendus sit, donec tempus auspicatò succurrendi præteriverit.

CAP.

CAP. VI.

De Prognosi.

LXI. QUUM *hydrocephalus phreniticus* plerumquè lethalis sit, semper periculosus; medici, quippe qui nullam dum sciant rationem, quâ certò curetur, nunquàm audent eo laborantibus salutem polliceri. Qui enim ab eo revaluerunt, ii sanè numero perpauci sunt, pro iis quibus mortem attulit. Ne unum quidem eo correptum servare potuit WHYTTIUS *. Viginti duobus laborantibus inauspicatò succurrit MONRO †; quadraginta GREGORIUS ‡. Hic verò medicus putat, se nupèr

* Vid. WHYTT. *Observations on the Dropsy of the Brain*, pag. 46. et 47.

† Vid. MONRON. SECUND. *Treatise on the Brain.*

‡ Aud. GREGOR. Prælect. *De Medicin. Practic.* in *ACAD. EDIN.*

nupèr duos, hoc morbo affectos, ad sanitatem perduxisse.

LXII. Quanquam autem hic morbus sanatu difficillimus est, et persæpè lethalis; medici tamen non debent desperantèr ægris subvenire, et verbis discrimen aggravare, quo versentur. Nonnulli enim, ut perhibent DOBSONIUS, et PERCIVALIUS, tempestivâ medicinâ ad sanitatem pervenerunt. Ex viginti ægris, quibus medicinam fecit hic medicus, convaluerunt undecim. RUSHIUS *, ut ipse scriptis testatur, hunc morbum compluries curavit; bis RUTHERFORDIUS †.

LXIII. Quo diutiùs continuavit morbus, quem persequimur, eo majus periculum urget, eoque minor ægrum manet spes. Ubì inveteravit

* Vid. RUSH. *Medical Inquiries and Observations*, vol. ii. p. 217.—223.

† Vid. MORISON. Disput. Inaug. *De Hydrocephalo Phrenitico*, § XCV.

ravit morbus, et supervenerunt stupor sensuum, sopor, pulsus celerrimi et inæquales, æger servari non potest. Convulsiones quoque nullam spem superesse testantur, et mortem denunciant.

LXIV. Nonnulla, contrà, spes superest, ubì pulsus arteriarum fiunt tardiores, et cùm vi tum temporibus æquales, simulque remittit insolitus calor corporis; ubì æger minùs rariùsque vexatur nauseâ et vomitu; ubì dolor capitis remittit, et lumen minùs refugiunt oculi.

CAP. VII.

De Curatione.

LXV. In primo spatio morbi, quem persequimur, medicorum est inflammationem, quæ tùm urget, discutere; in secundo et tertio facere, si possint, ut effusus humor, qui tùm cerebrum urget, et sensus stupefacit, à vasis, si qua, bibulis resorbeatur. Quâ ratione, et quibus medicamentis atque remediis, hæc exsequi aggrediantur medici, paucis exponere nobis in animo est.

LXVI. *Consilium primum.*—Quò digeratur inflammatio, opus erit, non solùm ut æger abstineat ab omnibus, quæ cor et artérias incitent, sed etiam nimios eorum motus sedare.

LXVII. *Abstinentia*—consistit cùm in vitando calore, luce, sonis, locutione, vehemente exercitatione; tum in abstinendo à carnibus, et vino, quæ cor et arterias, et totum quidem corpus, multùm stimulant.

LXVIII. *Exinanitio.*—Ad inflammationem discutiendam non satìs, per se, valet abstinentia. Prætereà necessarium est materiam demere ex corpore, aut mittendo sanguinem, aut alvum exinaniendo.

LIX. Sanguis mittendus, necne, sit ex brachio eorum, qui *hydrocephalo phrenitico* urgentur, inter medicos discrepat. Quòd hic morbus brevi, mirum in modum, corpus debilitat, et, quibus obrepit, ii plerumquè infantes aut pueri sunt, qui, præ tenera ætate, sanguinis jacturam malè ferunt; nonnulli idcirco medicorum timent venam incidere, ne, fluente sanguine, vires, quæ supersunt, fugiant, et mors gradum acceleret.

LXX. RUSHIUS

LXX. RUSHIUS autem, consideratâ morbi naturâ, timorem, quippe qui ei vanus videretur, exuit; et vel infantum tenerorum brachiis ausus est sanguinem semel iterumque emittere. Sanguine sic misso, adjuvantibus simul aliis medicamentis et remediis, septem *hydrocephalicos*, quorum quatuor erant infantes, percuravit *.

LXXI. Ubì igitur medicus animi dubius est, an idoneum sit brachii venam secare, debet, non tam quâ ætate æger sit, considerare, quàm quæ vis inflammationis sit, quæ corporis vires; atque, his cognitis et ponderatis, judicare ac secum statuere, sit, necne, sanguis mittendus. Si magna vis inflammationis urget, et æger est sanguine plenus, et, pro ætate, corpore validus; venam brachii semel, iterumque, imò, si opus, sæpiùs incidendam curare, nobis idoneum videtur.

F LXXII. Quum

* RUSH. *Medical Inquiries and Observations*, vol. ii. p. 217. et 222.

LXXII. Quum ad inflammationem digerendam tantùm valeat parva sanguinis copia, ex parte quàm proximâ emissa, quantùm major ex brachio, aliâve quâlibet parte ulteriore; sunt, qui putent, *hydrocephalo phrenitico* recente, sanguinem ex arteria alterutrius temporum detrahere, aut alterutrâ externarum juguli venarum, plùs multo profuturum. Haud equidem dubitamus, quin melius sit ex alterutra harum partium sanguinem elicere, modò adsit chirurgus usum habens, et manu promptus, qui venam arteriamve incidat. Sed non aliter; namque multæ res incisionem difficilem inscio faciunt, quæ perito facillima est.

LXXIII. Quòd si opus est vim inflammationis sedare, neque tamen, præ debilitate, tutum est venam arteriamve incidere, oportet ministris hirudinibus, aut cucurbitulis cum ferro, ex temporibus sanguinem emittere. Debilibus autem hoc, utì magis tutum auxilium est, ità minùs efficax remedium.

LXXIV. Quum

LXXIV. Quum eorum, qui *hydrocephalo phrenitico* urgentur, alvus ferè semper astricta sit, cathartica assumenda sunt, qualia eam vehementer moveant, simulque vermibus aliisque irritantibus vacuefaciant. Hunc in finem, optima sunt *submurias hydrargyri*, atque hic idem *submurias* unà cum *jalapa*. Hæc cathartica non solùm cient alvum in motus, quibus stercus et alia irritantia dejiciat, sed et, sanguinem de capite deducendo, aliquantùm sedant cerebri inflammationem.

LXXV. *Exulceratio*,—omni morbi tempore, idoneum et tutum remedium est. Primo enim spatio, urgentem inflammationem aliquantùm reprimit et mitigat; et, cùm ex vicinarum partium patulis arteriarum surculis sanguinis serum eliciat, potest fortassè secundo efficere, ut ex ventriculis resorbeatur effusus humor.

LXXVI. *Refrigeratio*—experienda quoque est, quippe cùm interdum ad inflammationem

discutiendam

discutiendam multùm conducat. Idoneum igitur erit identidem fovere caput ad cutem tonsum, et collum, dummodò nondùm insudent, aquâ frigidâ, aut aquâ quâcum frigidâ commixtum acetum sit; vel iisdem partibus lintea, his commixtis madida, inducere.

LXXVII. *Positura*—ipsa corporis intereà haud negligenda est. Quò arteriæ sanguinem ex sinistro corde languidiùs distribuant in cerebrum, atque hinc in dextrum expeditiùs conducant venæ; et sic discutiatur, saltemve mitescat, inflammatio; caput pulvinis suppositis, quantùm sinant vires, suffulciendum est.

LXXVIII. *Consilium secundum.*—Dictis breviter medicamentis et remediis, quibus medici conentur inflammationem digerere; nunc paucis exponemus, quibus medicamentis tentent facere, ut vasa bibula, si qua, effusum humorem ex ventriculis resorbeant.

LXXIX. *Sialagoga.*

LXXIX. *Sialagoga.*—Hujus generis medicamentorum longè potentissimum hydrargyrus est. Hoc medicamento PERCIVALIUS et DOBSONIUS, ut scriptis certiores nos faciunt, plures mortalium *hydrocephalo phrenitico* affectorum ad sanitatem perduxerunt. Alii autem medici, et hi quidem clari et nobiles, se compluries frustrà expertos esse confitentur.

LXXX. Quàm frequenter spem frustretur hydrargyrus, plùs satìs ostendunt MONRONIS experimenta. "*Since the month of August* "1779, *I have,*" inquit hic auctor, locuples et fidus, "*attended twenty-two patients la-* "*bouring under internal hydrocephalus, to* "*whom I have given mercury. Of these fif-* "*teen were males, and seven females. Twelve* "*of them were under seven years of age:* "*nine of them were from eight to fourteen* "*years of age: and one was twenty-three* "*years old. Four of them lived five days on-* "*ly, after I was called: nine of them surviv-* "*ed seven or eight days: three of them sur-*

"*vived*

" *vived ten days: five of them survived thir-*
" *teen or fourteen days: one, six years of age,*
" *survived four months, without any sensible*
" *enlargement of his head* *."

LXXXI. Quanquam autem, utì MONRO, aliique medici magni nominis, comperti sunt, hydrargyrus persæpè nihil proficit; tamen, cùm alii medici satìs fidi testentur, nonnunquàm ad spem respondere, et nullum dum aliud medicamentum sit inventum, quo morbus certiùs curetur, eum, sine mora, assumendum curare debemus, usquè eò ut salivam moveat.

LXXXII. Præparatorum ex hydrargyro optimum, quod, hunc in finem, ægri devorent, est *submurias*. Ne verò hic spem fallat, tantulâ copiâ interjectis temporibus assumi debet, quantula alvum non purget. Sat erit unum granum,

* Vid. ALEXAND. MONRON. SECUND. *Treatise on the Brain*, &c. pag. 62.

granum, vel, si alvus tarda et dura sit, duo, bis quotidie adhibere.

LXXXIII. Sed, quò hydrargyrus salivam citet, et morbum levet aut percuret, non sufficit ægrum in stomachum accipere. Prætereà opus est, præsertìm infantibus, quippe quibus salivam movere difficillimum sit, ut una drachma, vel sesquidrachma, vel, si hæc non satìs valeat, plus adhuc *unguenti hydrargyri*, *unguenti*ve *oxydi hydrargyri cineritii*, feminibus bis quotidie terve vehementer infricetur. Sic in hydrargyri usu perseverando, GREGORIUS bis, ut suprà (LXI.) memoravimus, hunc morbum persanavit.

LXXXIV. *Vomitoria*—prosint, necne, iis, qui *hydrocephalo phrenitico* laborant, dubium videtur. Fieri enim potest, ut vomendi nisibus sanguis per arterias in cerebrum validiùs distribuatur, et effusus humor adeò non resorbeatur ex ventriculis, ut potiùs increscat.

LXXXV. *Diuretica.*—

LXXXV. *Diuretica.*—Quò faciant medici, ut effusus humor ex ventriculis resorbeatur, raró, nostrâ ætate, præscribunt medicamenta, quibus urina citetur. Si qua hujus generis assumenda curant, *digitali purpureæ* debent certè primas concedere.

LXXXVI. *Sudorifica*—proficiant, necne, *hydrocephalo phrenitico* laborantibus, nondùm satìs constat. Æger quidem memoratur, qui magnum ex vaporario beneficium accepit; sed minimè satìs apparet, numne hoc morbo afficeretur *.

CAP.

* Vid. DUNCAN. *Medical Commentaries*, vol. VIII.

CAP. VIII.

De Prophylaxi.

LXXXVII. QUUM, utì compertum est, præcavere hunc morbum multo facilius sit, quàm curare; parentes, ex quibus natorum nonnulli eo periêrunt, debent providere, ne cæteri sanguine nimìs pleni fiant.

LXXXVIII. Hoc (LXXXVII.) consilio, diæta debet esse parca; exercitatio quotidiana et modica; atque in collo, aliisve partibus prope caput, fonticuli fieri, ac impediri, ne priùs sanescant, quàm præteriverit ætas, quâ huic morbo mortales opportuni sunt.

FINIS.

POSTQUAM hanc disputationem perfeceram, MONRO TERTIUS certiorem me fecit de tribus *hydrocephali longi* seu *chronici* exemplis, quæ ipse viderat ; atque mihi roganti amicissimè pollicitus est eorum historias scribere, quas, ipsius verbis, opusculo meo subjungerem. Amplius promissa fecit ; et sic non solùm de me optimè meritus est, sed etiam, quod majus, de medicis et medicina.

APPEN-

APPENDIX.

To Mr Paterson.

Dear Sir,

IN compliance with your wishes, I have sent you the histories of the cases of the Children labouring under Hydrocephalus Chronicus, whom I had occasion to visit lately, and have subjoined a few general observations on that disease.

Yours truly,

Alex. Monro jun.

St Andrew's Square,
August 24. 1803.

CASES

OF

HYDROCEPHALUS CHRONICUS.

CASE I.

THE patient is a boy, nine years of age. The mother told me that she had had a very difficult and lingering labour, and that his head at birth seemed to her to be longer than usual, and the skin of it was of a bluish colour.

His head increased gradually in size until he was four months old, after which it became so rapidly larger, that (to make use of the poor woman's own phrase) one thought they could see it growing; so that, at the age of nine months, he required as large a hat as a child of five years of age.

Since that period the child's head has gradually become larger.

Of

Of its ſhape, and ſize proportioned to that of the body, the annexed engraving will convey a more diſtinct and impressive idea than any verbal description.

The following are the measurements of the head.

At its greateſt circumference, that is, about the middle of the brow, it measures 36½ inches.

From the root of the nose to the middle ridge of the os occipitis, or from before to behind, the head measures 25 inches.

From ear to ear, or across the head, 24 inches.

To aſcertain the diameters of the head, I meaſured it by callipers, and found it to be from the most prominent part of the forehead, to the most prominent part of the occiput, about 11½ inches; and from the most prominent part on one side, to the most prominent part on the other side, 10¾ inches.

On pressing the head, it was readily discovered, that the two pieces which compose the os frontis of the fœtus were firmly uni-

ted

ted by bony matter. The parietal bones were completely ossified, except at their upper and anterior parts.

There are two projections in the forehead; there is a marked projection on each side of the head, and there is a projection in the middle of the back-part of the head, and two smaller beneath it.

The bregma was not completely ossified; a bridge of bone could be distinctly felt in the middle of it, which was about 1½ inch in breadth at its narrowest part, and which covered the superior longitudinal sinus; but on each side of the bregma there was an unossified portion, about two inches square.

The mother told me, that about eighteen months ago the bregma was much larger, and also that there were other soft parts in the back-part of the head, in which soft parts (I make use of her own words) hard pieces could be perceived, which conveyed the same sensation as if the skull had been broken in several places.

Some

Some parts of the skull are below the level of the rest, and seem as if they had been depressed in consequence of external violence.

The skin of the head has a shining appearance, from its distention; and from the same cause, the eye-brows are drawn upwards about an inch beyond the upper ridges of the orbits.

Notwithstanding the duration and severity of this disease, his faculties are not much impaired.

He readily answers all questions put to him, joins in conversation, seems much amused by company, and expressed much anxiety for the return of his father, who had gone out a fishing. His memory is good; he recollects the voices of those he has not heard speak for many months, and he amuses himself by making fishing-nets.

The only symptoms denoting an affection of the brain are, extreme irritability; his starting from the slightest noise; and his sleeping but very little.

His

His senses of hearing, smelling and tasting are very acute. He suddenly lost his sight last year.

Mr Stewart, while drawing his portrait, remarked that the figure of his orbits were much altered. They appeared unusually broad. The distance between the outer edges of the orbits was equal to 4¾ inches; and the eye-balls seemed to be forced out from the orbits.

His mother told me, that in the earlier part of his life, he seemed to suffer great pain in his head: he was observed to put his hands to his head very frequently, and to clasp them upon it; but he said he did not suffer much now, except from the great weight of his head.

He is subject to occasional febrile attacks, during which his pulse rises to 120 in a minute; he feels very uneasy, and his eyes are inflamed.

He eats generally very little, but with a good appetite; has had measles and hooping-cough, but not small-pox, though he slept in the room with his brothers when they had that complaint.

CASE II.

The patient is a girl, twenty-seven months old, and has had hydrocephalus since her birth.

The head is much enlarged, but of a very different shape from that of the preceding patient, being much rounder, and the forehead flatter; but one side of it is more prominent than the other.

The greatest circumference of the head is 24 inches. Across the head from ear to ear it measures $14\frac{9}{10}$ inches. By callipers, the head was found to measure, from the brow to the most prominent part of the back of the head, $7\frac{9}{10}$ inches, and $6\frac{9}{10}$ inches from side to side.

The posterior fontanelle is larger than in Case III., but the anterior is of a much smaller size.

This

This child's eyes are not affected; pupils are of a natural size, and contract readily on exposure to light. This child is also very irritable, and had convulsive fits for half a year.

CASE III.

The patient is a girl, twenty-two months old, and of a scrofulous family.

The mother informed me, that her other labours had been very easy; but that when she bore this child, she had a difficult and lingering labour.

The father remarked, that immediately after birth, his child's head was larger than usual, and also that the parietal bones were separated from each other to the distance of a finger's breadth; but the skin of the head was not discoloured in the slightest degree.

On measuring the greatest circumference of the head, it was found to be 1 foot $9\frac{6}{10}$ inches,

which is very nearly the same as her sister's head, who is a girl of ten years of age.

Across the head, viz. from ear to ear, it was $13\frac{3}{4}$ inches. From the root of the nose to the most projecting part of the occiput, it measured $13\frac{3}{4}$ inches.

I measured the diameters by means of callipers, and found that the head measured, from the brow to the back part of the head, $7\frac{1}{4}$ inches, and across $5\frac{9}{10}$ inches.

The bregma in breadth measures $4\frac{1}{10}$ inches. The posterior fontanelle is of a small size. When the child was about three months old, she had three convulsive fits; is still in a very irritable state; and is very easily alarmed by the slightest noises.

She sleeps but little.

Notwithstanding the duration and severity of the disease, her faculties are more perfect than might be expected. She distinguishes one person from another, and laughs when spoken to by her father.

She

She hears, smells and tastes as perfectly as other children, and sees tolerably well, although her eyes are inflamed, her pupils dilated, and she squints.

The mother believed that her child never had suffered very acute pain in her head; she never was observed to put her hands up to her head, nor to clasp them upon it.

The skin at the back-part of the head is ulcerated, from her lying on it. The lymphatic glands at the upper and back part of the neck were swollen, before the skin of the head was ulcerated.

Her appetite is voracious, but the growth of her body has been very slow, and she is much emaciated.

Has had measles and hooping-cough.

She has never attempted to utter an articulate sound.

GENE-

GENERAL OBSERVATIONS

ON

HYDROCEPHALUS CHRONICUS.

THIS disease is much less prevalent than hydrocephalus phreniticus or acutus, and generally attacks infants before, at, or soon after birth.

On account of its duration, it has been named Chronicus, in contradiſtinction to the hydrocephalus acutus, as some children have laboured under it for two, four, ſix, nay even for nine or more years *.

The

* "In nundinis quondam publicè se spectandum exhibebat homo, qui primo vitæ tempore hydrocephalo laboraverat, et languidam quidem vitam duxerat, sed tamen trigesimum annum superaverat: immanis erat capitis moles, dum reliquum corpus decennis pueri magnitudinem non superabat; sensus aderant quidem,

The effusion of a watery fluid into the ventricles of the brain, does not, during early infancy, prove so immediately fatal as at a later period of life when the sutures have closed, becaufe the pieces of the ſkull, being united by membranes only, recede from each other, while the water is accumulating within the head; hence the bad effects of pressure suddenly made upon the brain, or of long-continued pressure, are eluded.

Of the Causes which are said to give rise to Hydrocephalus.

MANY of these have been enumerated by Mr PATERSON. I ſhall therefore remark only, that

dem, hebete tamen erat ingenio, nec multùm se movere poterat; imo ingens capitis pondus impediebat, quo minùs erecto situ diu sedere posset, nisi retro appositis pulvinaribus sustineretur." VAN SWIETEN, *Comment.* § 1217.

that it is sometimes difficult to determine whether the disease began while the child was *in utero*, or whether it was the effect of violence done to the child's head during delivery.

The mother of the child twenty-two months old, had a very difficult labour, which may have been the consequence of the preternatural size, which her child's head had acquired *in utero*, and the following circumstances concur in rendering fuch an opinion probable.

1*st*, As at birth there was no mark of violence about the head, which was of an unusual size.

2*d*, As the mother is well formed, and as all her other labours were easy.

But in the other cases, the heads of the children were pressed into an oblong shape, and were, immediately after birth, observed to be much swelled and discoloured. May not therefore the unusual size of the child's head have been in the former instance the cause of the

the difficult labour? and may not hydrocephalus in the latter instances be the consequence of the pressure which the children's heads had suffered during delivery?

Upon the whole, I should rather suppose that in most cases the disease existed before the birth of the child, and that the tedious or difficult labour was to be imputed to the preternatural size of the head.

Of the Changes as to Size and Shape which the Head undergoes during the different stages of Hydrocephalus Chronicus.

In consequence of this disease, the head soon acquires a preternatural size and form.

There is more difference as to the particular shape which the heads of different individuals assume, than in their size, which depends upon various causes.

Besides

Besides the effects of diseases, and the differences in the form of the heads of the inhabitants of different countries, there also are other causes which contribute to bring about a change in the shape of the head.

1*st*, There is a form of head which is peculiar to members of the same family; and it may not be improper to add, in illustration of this principle, that the foreheads of the sisters and brother of that child, whose forehead had become remarkably prominent, in consequence of hydrocephalus, were also more prominent than usual.

2*d*, The uniform and equal growth of every part of the bones of the brain-case may be stinted, or its shape distorted by posture.

Cases I. and III. afford striking examples of the operation of posture and pressure in modifying the form of the head. In the former instance, from the boy sleeping most frequently on his back, the back part of the head on which he rests has become flat: and as, in the latter case, the child was suckled

at one breast only, the pressure of the mother's arm prevented the one side from bulging out as much as the other.

Anatomists differ very widely in their opinions with regard to the cause of the form of the head; *viz.* Whether does the brain serve as a mould upon which the skull is formed; or does the skull serve to limit the growth of the brain, so as to model it to a particular shape?

The former of these opinions, which has the support of many facts, is now most generally adopted, and the sequel of this paper will shew, that what takes place in hydrocephalus chronicus adds an additional fact in support of it.

It seems probable, that in cases of hydrocephalus chronicus, there is not the usual balance betwixt the actions of the arterial and absorbent systems. The arteries of the brain do not secrete the usual quantity of medullary matter, while the absorbent vessels, in consequence of the distention and pressure,

act

act much more powerfully than usual, and remove a considerable portion of the brain.

The morbid appearances discovered upon dissection, have shewn, that in many instances, almost the whole substance of the brain has been removed. Its cavities have been so distended, that the brain itself seemed only a thin lining to the dura mater.

In such a morbid state, the water contained within the ventricles will push the brain outwards, and will separate the pieces of the brain-case to a greater or less distance, in proportion as the water is effused into the enlarged ventricles in a greater or less quantity.

In order to describe the changes which the head undergoes in its size and form during the successive stages of hydrocephalus chronicus, it seemed necessary to premife the preceding observations.

By keeping these in view, and by marking the progress of ossification, and also the mode of attachment of the different bones of the skull, the phenomena that present themselves

appear

appear to me to admit of a satisfactory explanation.

The form of the skull of the fœtus is very different from that of the adult: in the former, it projects remarkably at the original centres of ossification of its component pieces, and hence the upper part of the skull of the fœtus is not of so round a figure as that of the adult.

In the adult, those prominences which are very apparent in the fœtus disappear, owing to the gradual growth and alteration of the shape of the brain, which serves as a mould on which the skull is formed.

But as, in consequence of hydrocephalus, the growth of the brain is checked, or in some measure suspended, the brain does not acquire its usual form; and as the brain is pushed outwards from the accumulation of water within it, the pieces of the brain-case, though they increase in size, retain the form they had when the child was born; and the ossific spiculæ, instead of describing portions

of

of spheres, as they do at a later period of life, describe only straight lines from their centres of ossification.

Hence the head of a child labouring under hydrocephalus chronicus, notwithftanding its increased bulk, preserves for some time the form it had at birth.

Some of the prominences in the head are more apparent than others: those on the forehead are evident even to the most superficial observer: the others also may be detected by a careful examination.

These prominences, in cases of hydrocephalus, correspond in situation, as in the fœtus, with the original centres of ossification of the different pieces of the brain-case.

The os frontis in the fœtus is composed of two pieces. Two projecting parts are seen in the foreheads of all children labouring under hydrocephalus chronicus. There is a well-marked projection on each side of the head corresponding with the centres of ossification of the parietal bones.

There

There is only one projection in the upper and middle part of the os occipitis, which corresponds in situation with the largest piece of the os occipitis of the fœtus.

It also frequently happens, that there is a marked inequality as to the size of the projections on opposite sides of the head, which gives the head a distorted appearance; and in some instances, such an inequality in the growth of the head takes place at the back-part of the head; in others, in the forehead.

In Case III. that part of the head which is opposite to the centre of ossification of the right parietal bone, is more prominent than the same part of the skull on the left side; but the skull on the right side, underneath the prominent portion, is almost flat; whereas the corresponding portion on the left side bulges out, and forms a semicircular line downwards towards the neck.

In Case II. one side of the os frontis was much more prominent than the other to such a degree, that if the profiles of both sides

sides of the head had been taken, no one could have conceived them to have represented different views of the same head: the one would have been thought to be the profile of a child whose head was a little larger than usual; whereas the other bears all the characters of the head of a child labouring under hydrocephalus chronicus.

Such is the state of the head in the first stage of hydrocephalus chronicus; perhaps it may not be improper to add, that in some cases of hydrocephalus chronicus, some parts of the head are below the level of the others, which is probably owing to the ossification not being completed at those places.

But during the progress of the disease, the head exhibits many striking varieties as to its form and size. It does not preserve its natural form. It acquires an unusual breadth, especially at those parts which correspond with the centres of ossification of the parietal bones, and also in the forehead.

The effusion of a watery liquor into the cavities of the brain, which takes place to a

greater or less degree in different instances, produces these effects *.

The former change is owing to the separation of the parietal bones; the latter is the consequence of the separation of the upper part of the pieces composing the os frontis: (for the lower parts of the pieces of that bone, on account of their connections with other bones which are ossified at an early period of life, cannot recede from each other to any distance); and hence the face, instead of being nearly oviform, somewhat resembles a triangle

* The undulation of a fluid within the head, may be distinctly perceived at the sutures, if the watery liquor has been effused between the membranes of the brain; nay, even where it is effused within the ventricles, especially if the quantity of it be large; as in such cases, in consequence of the pressure by distention, a great part of the brain is absorbed, and a communication is formed betwixt the water which is effused between the membranes, and that within the ventricles of the brain.

triangle in shape, of which the brow makes the basis, and the chin the apex.

As the disease advances, the forehead becomes unusually prominent, to such a degree, as often to prevent the unfortunate sufferer from seeing objects above the eyes.

Owing to the water contained within the head raising upwards the bregma, and membrane betwixt the parietal bones, the form of the head is still farther changed; its upper part becomes somewhat of a conical figure.

The next change as to the shape of the head which may be remarked, and which generally occurs only when the disease has been of two or three years standing, is the bulging out of the bones at the sides of the prominences; which is the consequence of a very large collection of water within the head.

The bones bulge out at the sides of the original centres of ossification of the pieces

of the skull, which form the most resisting points; and hence, in this stage of the disease, the prominences in the skull corresponding with the original centres of ossification of the pieces of the brain-case, are less apparent than in the head of a child who has laboured under hydrocephalus for a few months only.

But it may not be improper to add, that theſe changes in the form of the head take place much more rapidly in ſome than in other caſes.

This disease at its commencement, and also for some time thereafter, is proper only to the bones of the brain-case, but in process of time, the bones of the face partake of the disease, are enlarged, become distorted, especially those of the orbits *.

Of

* Vid. Annexed engraving

Of the Progress of Ossification in the Sutures.

Should the unfortunate patient linger for some years under hydrocephalus, nature endeavours to give protection to the brain, by completing the ossification of the skull; the progress of which, and all the symptoms which it gives rise to, I shall endeavour to describe.

This process, probably from the diseased state of the vessels, takes place imperfectly and unequally; so that instead of the whole void being filled up by bony matter, only a few pieces of bone, of unequal sizes and irregular figures, are formed for many months in some of the sutures, and in others for years, as in Case I.

This gives rise to the sensation which the mother of the boy of nine years of age, so feelingly

feelingly expressed: she said, her son's head, about eighteen months ago, seemed to her as if it had been broken in several places; but now the whole is consolidated: for the detached pieces of bone in the membranes uniting the pieces of the brain-case, have, in the progress of ossification, adhered firmly to these bones.

The ossification takes place at different times in the different sutures.

The membrane uniting the pieces of the os frontis, is generally ossified when the child is between its twelfth and twentieth month.

The membrane betwixt the os occipitis and parietal bones, is not ossified until a much later period of life; and the sagittal and coronal sutures were not ossified in the boy of nine years of age.

The head acquires its unusual bulk, in part from the greater size of the pieces of the brain-cafe, and in part alfo from the ossification of the membranes which united the different pieces of it.

These

These membranes are of unequal breadth; that between the two pieces of the os frontis, and that between the parietal bones being broader than the others, allows theſe bones to recede from each other to a considerable diſtance, and hence, as has been already obſerved, (in p. 24.), the head acquires an extraordinary breadth. From a similar cause, the os occipitis is protuded to a considerable degree; and were it not owing to the patient generally resting on the back-part of his head, that part of the head would also become very prominent.

HAVING described the changes which take place in the ſize and form of the head, during the different stages of hydrocephalus chronicus, I ſhall conclude this paper by adding a few remarks on the thickness of the skull, and on the changes which the other bones undergo in conſequence of this disease.

On account of the great size of the head, the bones of the brain-case are generally rendered much thinner than in the healthy state; and

and a case is quoted by VAN SWIETEN *, in which the bones of the brain-case became nearly transparent.

In some instances, every part of the skull has not been ossified, some spots of the brain being covered by membrane inftead of bone †.

When sheep are attacked by hydrocephalus, or when hydatids are lodged within their brains, the earthy part of the skull opposite to the seat of the disease is removed by absorption; that part of the skull becomes soft, feels like a piece of wetted pasteboard, and may be cut through, without turning the edge of the knife.

But

* "Ossa tamen capitis tenuia erant adeò, ut irradiante lumine pellucerent sic, ut interiora capitis videri potuerint." Vid. vol. iv. pag. 122. quarto edition, published at Leyden.

† Vid. Plates of Dr BAILLIE's Morbid Anatomy, Fasc. 10.

But in some rare examples, the reverse of what has been already described takes place; for the bones of the skull, instead of becoming thinner, become thicker than common, in consequence of hydrocephalus chronicus *.

MORGAGNI † informs us, that even the other bones of the body partake of the disease, and are much altered in shape. Such a change, I believe, but rarely occurs; but I have no doubt, that in almost all cases of hydrocephalus chronicus, the bones of the skeleton are, as the soft parts, of a more slender form and thinner than usual; or that even supposing the head not to be of a larger size than usual, the rest of the body does not bear the same proportion to it as in healthy children.

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* Vid. DU VERNEY Traité des Maladies des Os, tom. ii. pag. 8.

† Vid. Epist. xii.

FINIS.



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